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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,380

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EXAMINER

BURCH, MELODY M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,380	Applicant(s) THEMELIN ET AL.	
	Examiner Melody M. Burch	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/19/08, 5/20/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-19 and 21-27 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/19/08 & 5/20/08 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of the bars being provided with projections in the form of cooling fins as recited in claim 21 and the limitation of the heat shield recited in claim s 26 and 27 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Examiner notes that paragraph [0037] of the published application discusses such an embodiment, but it is not shown. As best understood, Examiner has interpreted portions of the circumference of the flared end 331 to be the cooling fins in the absence of further drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as “Annotated Sheets” and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, “the list may not be incorporated into the specification but must be submitted in a separate paper.” Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See the references listed in paragraph [0006] of the patent application publication for the instant invention.

Specification

4. The disclosure is objected to because of the following informalities: references to figure 1 on pg. 9, figure 2 on pg. 10, figure 3 on pg. 11, and figure 4 on pg. 10, for

example should be changed since the figure numbers have been changed to accommodate the various views.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the Examiner whether the projections in the form of cooling fins are portions of the circumferential flared end 331 or not.

Clarification is required. Also see the drawing objection above.

Claim Objections

7. Claims 18, 20, and 21 are objected to because of the following informalities: the phrase “the housings” in line 2 of claim 18 lacks proper antecedent basis in the claim. Appropriate correction is required. The remaining claims are objected to due to their dependency from claim 18.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 3480117 to Agren et al.

Re: claim 12. Agren et al. show in figure 3 a disc brake pad comprising at least one brake lining 34 and a carrier plate 22 to which the at least one brake lining is affixed over a first surface of the at least one brake lining, the carrier plate extending beyond the brake lining in at least one of length and width as shown in figure 1, the at least one brake lining having a planar friction surface opposite to the first surface which is constructed and arranged to come into frictional contact with one face of a disc 12, the brake pad being provided with a heat dissipating structure 42 which directs a heat flux to be dissipated in at least one direction substantially parallel to the planar friction surface, the heat dissipating structure being formed at an interface between the at least one brake lining and the carrier plate as shown.

Re: claim 13. Agren et al. show in figure 3 wherein the heat dissipating structure is formed in at least one of the at least one brake lining and the carrier plate, at the interface therebetween as shown.

Re: claims 14 and 15. Agren et al. show in figure 3 wherein at least one of the at least one brake lining and the carrier plate comprises grooves that form holes other elements 42 having axes along directions substantially parallel to the planar friction surface, the holes being through holes open at ends thereof and through holes through which air can pass freely.

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10. Claims 12-16 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6206151 to Nakamura.

Re: claims 12, 13 and 22. Nakamura shows in figures 12a-12c a disc brake pad comprising at least one brake lining 104 and a carrier plate 128 to which the at least one brake lining is affixed over a first surface of the at least one brake lining, the carrier plate extending beyond the brake lining in at least one of length and width as shown in figure 12a, the at least one brake lining having a planar friction surface shown in the area near the end of the lead line of 104 opposite to the first surface which is constructed and arranged to come into frictional contact with one face of a disc, the brake pad being provided with a heat dissipating structure 150,154 which directs a heat flux to be dissipated in at least one direction substantially parallel to the planar friction surface due to the upward direction of the heat dissipating structure, the heat dissipating structure (at least a surface of which) being formed at an interface between the at least one brake lining and the carrier plate as shown.

Re: claims 14, 15. Nakamura shows in figure 12b wherein at least one of the at least one brake lining and the carrier plate, particularly the carrier plate comprises grooves 134 that form holes having axes along directions substantially parallel to the planar friction surface, the holes being through holes open at ends thereof and through which air can pass freely as shown.

Re: claim 16. Nakamura shows in figure 12a wherein the heat dissipating structure comprises peripheral projections shown near the end of the lead line of

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number 102 around the carrier plate, the projections being provided with cooling fins 150,154.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agren et al. in view of US Patent 4135606 to Lewis and US Patent 5609777 to Apunevich et al.

Re: claims 17 and 19. Agren et al. lack the limitation of the heat dissipating structure comprising bars made of a material which conducts heat better than the lining or the carrier plate in which the bars are placed.

Lewis teaches in figure 2 the use of a brake pad including a heat dissipating structure comprising bars 48 made of a porous material compared to the material of the lining 41 in which the bars are placed.

Apunevich et al. teach in figure 1 the use of a porous material 8 that is described as being heat conducting and particularly being made of copper. See col. 3 lines 46-47.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the heat dissipating structure of Agren et al. to have included bars made of a material (for example copper as suggested by the instant invention) which conducts heat better than the lining in which the bars are placed, in

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view of the teachings of Lewis and Apunevich et al., in order to provide a means of maximizing heat dissipation to reduce brake lining deterioration and improve vehicle safety. With regards to claim 19, the bars are hollow due to the presence of cavities 42.

Re: claim 18. Agren et al. satisfy the limitation wherein the heat dissipating structure is disposed in the area of holes formed at the interface of the lining and the carrier plate. Modifying Agren et al. with the teachings of Lewis would result in the bars being placed at the interface.

13. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agren et al. in view of US Patent 4438004 to Myers.

Re: claim 23. Agren et al. are silent with regards to the carrier plate being made of metal and being attached to the brake lining by brazing or machining.

Myers teaches in claim 4 the use of a disc brake pad wherein the carrier plate is made of metal and is attached to the brake lining by brazing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the disc brake pad of Agren et al. to have included a carrier plate made of metal and being attached to the brake lining by brazing, as taught by Myers, in order to provide a means of improving the structural integrity of the carrier plate and also to provide a means of securely connecting the two components together.

Re: claim 24. Agren et al., as modified, teach in col. 4 lines 52-53 of Myers the use of the carrier plate being formed of steel.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the carrier plate of Agren et al., as modified, to have been made of steel, as taught by Myers, in order to reinforce the integrity of the pad.

14. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of US Patent 4438004 to Myers.

Re: claim 23. Nakamura is silent with regards to the carrier plate being made of metal and being attached to the brake lining by brazing or machining.

Myers teaches in claim 4 the use of a disc brake pad wherein the carrier plate is made of metal and is attached to the brake lining by brazing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the disc brake pad of Nakamura to have included a carrier plate made of metal and being attached to the brake lining by brazing, as taught by Myers, in order to provide a means of improving the structural integrity of the carrier plate and also to provide a means of securely connecting the two components together.

Re: claim 24. Nakamura, as modified, teach in col. 4 lines 52-53 of Myers the use of the carrier plate being formed of steel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the carrier plate of Nakamura, as modified, to have been made of steel, as taught by Myers, in order to reinforce the integrity of the pad.

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15. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agren et al. in view of US Patent 4280935 to Ogiwara.

Agren et al. are silent with regards to the material of the brake lining.

Ogiwara teaches in col. 1 lines 59-61 the use of a brake lining comprising graphite, ceramic powder and metallic chips bonded by a resin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake lining of Agren et al. to have included materials, as taught by Ogiwara, in order to provide a means of producing a brake lining that has structural integrity to improve product reliability.

16. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of US Patent 4280935 to Ogiwara.

Nakamura is silent with regards to the material of the brake lining.

Ogiwara teaches in col. 1 lines 59-61 the use of a brake lining comprising graphite, ceramic powder and metallic chips bonded by a resin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake lining of Nakamura to have included materials, as taught by Ogiwara, in order to provide a means of producing a brake lining that has structural integrity to improve product reliability.

17. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agren et al. in view of US Patent 3563347 to Hahm.

Agren et al. are silent with regards to the material of the brake lining.

Hahm teaches in figure 1 the use of a heat shield 14 disposed over a surface of the carrier plate 13 opposite to the at least one brake lining.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake lining of Agren et al. to have included a heat shield, as taught by Hahm, in order to provide a means of reducing the temperature at the brake pad to reduce the possibility of early deterioration.

18. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of US Patent 3563347 to Hahm.

Nakamura is silent with regards to the material of the brake lining.

Hahm teaches in figure 1 the use of a heat shield 14 disposed over a surface of the carrier plate 13 opposite to the at least one brake lining.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake lining of Nakamura. to have included a heat shield, as taught by Hahm, in order to provide a means of reducing the temperature at the brake pad to reduce the possibility of early deterioration.

Allowable Subject Matter

19. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. Claim 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

21. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection. Examiner notes, however, that Lewis is used solely for the teaching of the hollow bars. The arrangement of the heat dissipating structure at the interface is already satisfied by the base references.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb
August 22, 2008

/Melody M. Burch/
Primary Examiner, Art Unit 3683